

CHICAGO NEUROLOGICAL SOCIETY.

Joint Meeting with the Chicago Medical Society.

April 2, 1902.

The President, Dr. Daniel R. Brower, in the chair.

Definition and Pathology of Neuritis.—Dr. Archibald Church spoke on this phase of the subject. He said that some fifteen years ago nothing was heard of neuritis. There was even a general feeling that the nerves were to some extent immune against the processes of inflammation. Ten years ago a definition of the term neuritis would have been of the greatest ease; if one had said that it meant inflammation of the nerve, he would have covered the ground. This condition, at first apparently simple, had been found to be complex, and now the term neuritis was a generic one. It had to some extent been stretched out of its proper significance.

He divided cases of neuritis into the true form, marked by inflammation in the nerve or its fibrous support, and those forms of neuritis characterized by degenerative processes. True neuritis, the first variety, was generally confined to a single or to several nerves, but it did not, as a rule, involve a great number of nerves. It was inflammatory, and usually arose from the surrounding tissues involving the nerve by extension, by continuity or contiguity.

It may be secondary to a new growth. Any variety of neoplasm in the neighborhood of the nerve may by infiltration set up irritation and terminate in actual inflammation of the nerve. In some instances the nerve was invaded by the tubercle bacillus; in others by the germ of leprosy. Syphilis involved the nerves much more frequently than was supposed. Sometimes when sciatica does not yield to ordinary methods of treatment, a course of mercury is proper. In leucocythemia and a number of other disorders of the blood characterized by dyscrasia and disintegration of blood elements, portions of the peripheral nerve were inflamed, presenting a true neuritis.

Attention was directed at considerable length to the degenerative form of neuritis. The speaker said it was more common than the inflammatory variety. The degenerative forms of neuritis were generally the result of toxic causes or elements, the principal ones of which were lead and alcohol. Various forms of cachexia, especially syphilis, were attended by manifestations of degeneration in the motor portions of the peripheral apparatus.

The character of the degeneration in multiple neuritis was practically a Wallerian degeneration. Multiple neuritis must be looked upon as the result of systemic poisoning, and as a systemic disorder involving all portions of the nervous apparatus. The chief toxic substances which give rise to multiple neuritis were alcohol, lead, arsenic. Reference was made to the occurrence of the epidemic in Manchester, England, in connection with beer-drinking.

Owing to the idiosyncrasy of a patient, mercury given in the usual manner had been known to set up all the symptoms of multiple neuritis, the neuritis subsiding upon the withdrawing of the mercury. Other agents were mentioned as toxic substances capable of setting up multiple neuritis, among them phosphorus, sulphur, etc.

Among the autotoxic causes of multiple neuritis, he spoke of diabetes. In chronic interstitial nephritis, owing to a toxic condition, there

was disturbance of the nervous apparatus, showing itself in vague, yet when carefully considered, highly suggestive sensory manifestations of disturbance of the nervous apparatus. Another group of autotoxic factors arose from intestinal conditions. Individuals subject to dysenteries, parasites, and chronic intestinal disorder, might develop multiple neuritis. All of the infections practically were capable of inducing multiple neuritis through their toxic action.

In pernicious anemia one might have all the symptoms of neuritis which were attended in the majority of cases by histological changes in the spinal cord.

In old age, in patients in whom there was extreme arteriosclerosis, there were often manifestations of multiple neuritis, the disease arising from a number of causes. For instance, the artery which supplied the nerve, owing to an atheromatous condition and a sclerotic state, did not deliver enough nutrient material to the nerve, so that nutrition was disturbed locally.

Symptomatology, Diagnosis and Differential Diagnosis of Neuritis.—This was discussed by Dr. Sydney Kuh. He called attention to the fact that in toxic neuritis—and possibly in other forms—changes are found not only in the peripheral nerves but in the cells of the central nervous system as well, and that a large number of nerve fibers may be found degenerated in cases in which *intra vitam* no signs of disease in them could be detected. The disturbances of sensibility—both subjective and objective—were first described, then those of the higher senses, those of motility, of electric irritability, of coördination, of reflexes, of trophic, secretory and vasomotor functions, etc. Korsakow's psychosis as a symptom of multiple neuritis was discussed in detail and the constitutional symptoms accompanying neuritis briefly mentioned.

In speaking of the diagnosis of neuritis rules were given for its differentiation from rheumatism, disease of bones and the periosteum, hysteria, neuralgia, cerebral disease—especially that involving the facial and oculomotor nerves,—acute and chronic poliomyelitis, locomotor ataxia, muscular dystrophy and polymyositis.

Treatment of Neuritis, Other Than Surgical.—Dr. Elbert Wing said that in the treatment of neuritis it is of first importance to make a correct diagnosis; to determine that the case is one of neuritis, and whether simple, multiple, toxic, acute or chronic. The objects of treatment are removal of the cause, and restoration to normal conditions. When due to pressure, instrumental or from foreign growths, removal of the cause is often a simple matter, but may be difficult. A similar statement applies to cases due to, and complicated by, gouty or rheumatic states. In these cases disappointment is not apt to follow correct diagnosis and efficient methods of treatment. In cases due to mineral poisons the detection of the source of the offending element may at times be difficult, and in alcoholic cases clever deception on the part of the patient may increase the difficulty. In cases which are really those of the parenchyma—true degeneration, the pathologic conditions of course continue long after the specific cause is removed.

Relief of pain is imperative in all acute cases of severity. For this purpose hot cloths properly applied along the course of the nerve often are of great effectiveness. Counter irritation may answer, but should never be applied in the area of distribution of the affected nerve. In chronic cases the actual cautery is the best counter irritant. In acute simple cases Gowers' liniment is of great value. Sand bags, slings and splints have a useful function. They may promote relief of pain through limitation of motion, and prevent and correct deformities. In

most severe primary cases morphine is needed for the relief of pain. The coal-tar preparations rarely suffice. If used, the doses must be large, frequently repeated, and acetanilid should never be used for this purpose. Morphine, cocaine and other analgesics are most effective when placed, by means of a hypodermic syringe, in the immediate proximity of the affected nerve.

Stretching of the nerve, in simple sciatic cases, by forcible flexion of the trunk upon the extended lower extremities, or of the extended extremity upon the trunk, the body supine, is at times remarkably successful both in relieving pain and promoting recovery. The same is true of efficient massage. The use of electrostatic currents and the Roentgen rays have a useful future in the relief of pain in probably all cases of neuritis. Unfortunately they are not often available for treatment of these cases. In some cases the galvanic current has decided pain relieving power, in others its use increases pain. A safe rule is never to use a current strength which causes a decided increase of pain at the time of its use, or any persistent increase.

The rare forms of neuritis due to syphilis are treated along the general lines of the two diseases and need no elaboration in this connection.

The various forms of multiple neuritis differ radically in their causes, but are so essentially similar in their pathologic conditions in many respects that their treatment is much along the same lines. These lines are removal of cause, prevention of contractures, protection of tender extremities, at times relief of pain, and finally the general tonic treatment of any severe chronic disease in which the essential lesions are degenerative. In this list general tonics take high rank and the salts of strychnia the first. As in any other chronic condition, the form of tonic used must be occasionally varied. In the chronic forms of simple neuritis the use of one grain of blue pill, two or three times daily, and for long periods, produces favorable results. In polyneuritic cases, massage, skilfully used, the proper use of splints and electricity, together with voluntary exercise of muscles, bring about cures even in the worst cases.

Two classes of multiple neuritis require special mention. As a rule, in alcoholic neuritis, alcohol may be withdrawn at once. In the variety of neuritis due to lead, the conventional attempts at specific removal of the mineral are at first demanded.

The causes of death in the fatal cases indicate clearly the special care which is needed, cardiac and pulmonary weakness being induced both directly by the special cause in each case and by the auto-intoxication which may arise in any case. These principles of treatment must be constantly in mind in every case of multiple neuritis. They are usually simple and well understood, but must be the objects of constant watchfulness.

Surgical Treatment of Neuritis.—Dr. Weller Van Hook discussed this phase of the subject, saying that surgery is in a position to be of service in the treatment of the consequences of neuritis rather than in the management of the actual disease itself, whether acute or chronic. In the acute form of the disease, aside from those instances in which a suppurative lesion is present, very little can be done by surgical means for the relief of the patient, except to afford some aid by rest. Where pressure upon a nerve is superinducing neuritis, or neuralgia, the case belongs within the province of surgery. Where fractures primarily or secondarily involve large nerve trunks, operative procedures are frequently needed; for example, where a fractured clavicle

presses upon the brachial plexus, relief by elevating the fragments and separating the connective tissue from the nerve is of absolute necessity. Not infrequently the long bones, when fractured, similarly press upon important nerve trunks.

In open injuries, where infection is likely to occur, the utmost care must be taken by the surgeon to prevent infection of the wound, particularly where large nerve trunks are likely to be involved. There may be not only inflammation of connective tissue around the nerve involving the nerve trunk in adhesion, but it is also possible to have from such a wound a migrating neuritis successively involving different nerves. This form of neuritis is supported as a nosological entity by Krehl, who maintains that well-marked cases of the disease have frequently come under his observation.

In the chronic forms of neuritis surgery is of more frequent avail. It is in the treatment of the consequences of peripheral neuritis that surgery finds the greatest scope. In compression of nerve trunks by periostitis, it is admissible to remove the connective tissue around the nerve, as has been frequently done, an operation which is termed neurolysis.

Tumors of a non-malignant character that press upon large nerve trunks, producing more or less of an inflammatory condition, should be attacked by excision, while those which are of malignant character demand removal of the nerve or of a part of the nerve itself.

The method which one should pursue in the treatment of hemorrhages within and about nerve trunks is yet open to difference of opinion. No definite rules have been laid down for the management of cases of this kind.

In the case of chronic inflammation producing neuralgia, a variety of surgical procedures are at the disposal of the surgeon. The stretching of chronically inflamed nerves is no longer practised so freely as was formerly the case; nevertheless, in cases of true neuralgia of the sciatic nerve, Hoffa recommends in selected cases the stretching of the nerve, at first by the subcutaneous method, and later, if necessary, by an open procedure.

The method of extraction of the nerve, exeresis, at first practised by Thiersch, is still in very common use. Undoubtedly, the majority of cases of neuralgia of the trigeminus can be cured by exeresis, and it is by no means necessary that the Gasserian ganglion should be excised in ordinary cases of this disease. On the contrary, this formidable and dangerous operation should be reserved for those cases in which peripheral operations have been thoroughly tried.

When paralysis is a consequence of neuritis, surgery offers relief in many cases by transplantation of nerves or of tendons. Results obtained by this modern method of treatment are very gratifying.

The French school of surgeons, at the head of which is Chipault, have of late shown much enthusiasm in the management of many cases of peripheral nerve disease, particularly of the trophic varieties, by stretching. It is claimed by Chipault that *mal perforant* of the foot can be favorably influenced in many instances by the stretching of the nerves of the leg.

It is particularly in cases where the sciatic has been injured, or where it has been involved in inflammations of the thigh, that nerve stretching has seemed to be of service in *mal perforant*.

Sciatica was discussed by Dr. L. Harrison Mettler. *Sciatica* in some recent textbooks is still classified under several heads, as for instance primary and secondary. The primary is divided into the idiopathic and

the special forms of neuritis. He thought this was a mistake. He could not conceive of a secondary sciatica in the sense of a mere pain of the nerve caused by some extraneural pressure. If there is disease of the bone, tumor, or other condition causing secondary disease, either of an inflammatory or degenerative type, in the sciatic nerve, it might seem to be a secondary sciatica, but it is only secondary etiologically. It is really a sciatic neuritis; hence he thought so-called secondary neuralgia, or sciatica, as a special class should be dropped from the books. Almost all the cases he had seen of sciatica exhibited more or less the symptoms of sciatic neuritis. The symptoms which usually accompany so-called ordinary idiopathic neuralgia of the sciatic nerve were those that are characteristic of sciatic neuritis. These were mentioned.

As to the treatment in cases of sciatic neuritis, where there was a rheumatic diathesis, he obtained the most favorable results from the use of the salicylates, pushing them until he got a decided physiological effect. He had not seen such favorable results from the use of mercury or anti-syphilitic treatment. Sciatica was not usually caused by syphilis.

Neuritis of the Fifth Nerve.—Dr. Daniel R. Brower detailed the report of a case of this form of neuritis. In taking the patient's history he inquired very carefully into his antecedents, particularly as to syphilis. The patient at first denied syphilis. In early life the patient had had two or three attacks of rheumatism. He was quite anemic. Dr. Brower did not know just how to begin treatment of the case, but first treated him on the anemic theory, and tried to build him up by the administration of appropriate hematinics; at the same time using galvanism. Under this treatment the patient grew worse. He was then treated on the rheumatic line, salicylates and iodides being given. The patient did not improve under this treatment, but became worse. Finally, believing that the patient was mistaken as regards syphilis, he gave him the mixed treatment for syphilis, and the pain disappeared as if by magic. Again he asked the patient in regard to syphilis as the probable etiological factor, and he admitted it.

He had had within three months two cases of neuralgia or neuritis of the fifth nerve, both syphilitic. It was rare in his experience for this nerve to be attacked by the syphilitic poison, but these cases coming so close together were interesting as well as instructive.

Dr. C. P. Pruyn said that dentists had a good deal to do with neuralgia of the fifth nerve. He was a little surprised on being told by a prominent neurologist that neuralgia of the fifth nerve was seldom caused by tooth irritation. Frequently the patients consulted dentists for relief after they had gone through the gamut of the general treatment by physicians, and tooth irritation was found to be the cause. Often there was calcification of the tooth pulp, sometimes complete, at other times simply a calcified nodule, which caused the whole disturbance. The removal of this nodule effected a cure.

Dr. O. B. Will, of Peoria, believed that in the acute or primary form of neuritis, where the patient was suffering much from neuralgia, the best treatment was the administration of chloroform or ether. He used this altogether in his own case, and his professional friends had adopted it, with good results. The chloroform should be administered *per orum*, hypodermically, or by frequent inhalations. He thought there was no agent that would do as much in bringing about permanent relief in the class of cases under discussion as this agent. It should not be administered, however, to the point of anesthesia, but the system should be more or less saturated until pain was relieved.

Dr. A. W. Baer had used the salicylates in the rheumatic form of

neuritis, with beneficial results, especially if not pushed to the point of interfering with the functions of the stomach. He had never obtained much benefit or relief in these cases from external application, outside of heat and cold, except from the effects of rubbing oil on the parts affected. If the neuritis were of traumatic origin, the interrupted galvanic current was by all odds the best, and he had obtained some excellent results from it. Sparks from the static current in cases of toxic neuritis had given excellent results.

Dr. Julius Grinker thought motor disturbances were often the most prominent symptoms in cases of neuritis. Diphtheritic paralysis was nothing but a neuritis following diphtheria infection, manifesting itself by motor disturbances principally, the sensory disturbances taking a back ground, or perhaps not being noticed. Faucial paralysis follows diphtheria. He had seen a staggering gait develop in children after diphtheria. This was nothing but a symptom of multiple neuritis. It is well to recognize these forms of neuritis, because by so doing a life could occasionally be saved. Physicians hear of sudden deaths of children after diphtheria. A child is said to get well, walks about, but cannot swallow readily; fluids are regurgitated, and the child suddenly dies. Heart failure is said to be the cause of death. He thought possibly many of these cases were due to vagus involvement, the neuritis having developed and progressed rapidly and involved the vagus, killing the child, the nature of the trouble being unnoticed by the physician. Symptoms should be looked for in cases of diphtheria even after recovery has occurred. He urged that the reflexes be tested, as the first symptom noted after diphtheria of oncoming neuritis was absence of reflexes. When the reflexes are diminished or absent, one should look out for neuritis. It might develop rapidly and kill the patient.

Not long ago he was called to see a case in private practice. A child commenced to stagger two weeks after diphtheria. The mother noticed that the child's eyes seemed to be in the same position; in directing the child's attention to anything, it would stare in front of it and not move a muscle. He was called and recognized paralysis of almost all the ocular muscles, also paralysis of the lower extremities. He considered it a neuritis following diphtheria. He gave the child strychnia in large doses, and it is well today. He does not believe in giving the usual textbook doses of 1-120 of a grain, but the 1-30 of a grain, three times a day.

Dr. G. W. Hall said he had had the privilege in the last few months of seeing at the County Hospital two extreme cases of peripheral neuritis involving all the limbs of the body. The first patient, when admitted to the hospital, was unable to move either a hand or foot, and had no sensory disturbances. In the other case both arms and lower limbs were involved completely, with facial paralysis on one side, finally extending to the other side, with complete motor paralysis of all the limbs. There were no sensory disturbances. It was important to remember in making a diagnosis that sensory disturbances are not necessarily present. He believed that next to alcoholism sensory disturbances were more frequently present in peripheral neuritis than in any other form. He emphasized the great difference as to the presence and absence of sensory disturbances in the different forms of neuritis, saying that in neuritis following lead poisoning the sensory disturbances were very slight as compared with the motor. In neuritis following alcoholism it was very rare that we did not have sensory disturbances present to a greater or less extent. He believed in many cases paralysis comes on almost simultaneously with sensory disturbances.

Dr. Liston H. Montgomery would not care to use such large doses of strychnia as mentioned by Dr. Grinker. A formula which he had used with beneficial results is one composed of menthol crystals, dilute phosphoric acid, and a few drops of tincture of aconite with alcohol.

He thought it was an oversight that no one had mentioned rheumatism as a possible etiological factor of single or multiple neuritis.

Diet was a very important feature in the treatment of many cases of neuritis. Recently he had a patient who had suffered from multiple neuritis which had defied every form of treatment for eight years. One of the first questions he asked was whether any of the former physicians had ever prescribed a diet for the patient, and the patient replied that he was allowed to eat anything he desired. The speaker eliminated a number of articles from the diet, and along with the preparation mentioned he gave iodide of potassium in twelve grain doses, three or four times a day, and under this treatment the patient recovered.

Dr. Grinker did not consider the thirtieth of a grain of strychnia, administered to a child of eight or twelve years of age, a large dose. He had used it in such doses in several cases with excellent results.

Dr. I. A. Abt believed that strychnia is frequently given to children in too large doses. Not long since he saw a child at a hospital suffering from extreme rigidity and from opisthotonos. The symptoms made him think of tetanus, possibly a meningitis. He looked at the history sheet and found that the child, an infant not more than a year old, was getting nearly the twentieth of a grain of strychnia in twenty-four hours, and was suffering from strychnine poisoning. During the infantile period he believed great caution should be exercised in the administration of this drug.

Dr. James W. Walker mentioned the use of the Paquelin cautery in the treatment of neuritis, saying that he had obtained excellent results in the relief of pain. He could say nothing regarding its effect upon the inflammatory process in acute neuritis. It seemed formidable to the average practitioner to see it used. The lightest possible touch was all that was necessary. It could be used once daily, or once every other day, two or three strokes being made in the vicinity of the pain, affected joint or nerve.

Dr. Thomas L. Gilmer said he had been a sufferer from neuritis, especially of the sciatic form. A short time ago Dr. McArthur gave him a prescription for local application which did him more good than any one thing he had used for a number of years. This prescription was: menthol, 8 grams; oil of gaultheria, 30 grams, and creasote, 2 grams.

Dr. Kuh, in closing the discussion, agreed with Dr. Montgomery that rheumatism and a number of other causes might produce neuritis, Bright's disease amongst others.

With reference to the remarks of Dr. Grinker, he said that if his (Grinker's) patient had paresis of the lower extremities, associated with total paralysis of the movements of the eyeballs, the patient probably did not suffer from a diphtheritic neuritis. Total paralysis of all the extrinsic muscles of the eyeballs could hardly occur in neuritis.